

Date: Sun, 31 Oct 93 04:30:12 PST  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #95  
To: Ham-Ant

Ham-Ant Digest                      Sun, 31 Oct 93                      Volume 93 : Issue    95

Today's Topics:

1/4 wave vs 5/8 wave  
2 mtr j-pole on 440?  
Broadcast AM antenna question  
Coax termination blues.  
Foxhunting Antenna: H vs DOPPLER  
J-Pole lobe (radiation pattern)  
Wanted: VHF/UHF Yagi measurements  
Wire Size question

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Fri, 29 Oct 1993 07:13:46 GMT  
From: rtech!amdahl!netcomsv!netcom.com!mont@decwrl.dec.com  
Subject: 1/4 wave vs 5/8 wave  
To: ham-ant@ucsd.edu

In article <1993Oct13.150125.1677@ve6mgs.ampr.org> mark@ve6mgs.ampr.org (Mark G. Salyzyn) writes:

>mont@ibmmail.COM writes:

>

>>A 1/4 wave antenna radiates a round pattern, sending some energy almost  
>>straight up into the sky and some energy down into the ground.

>

>Nope, itsa donut!

>

Picky picky, I said ALMOST straight up..... :)

73,  
km6wt

--  
Mont Pierce

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+-----+
| Ham Call: KM6WT           Internet:  mont@netcom.com      |
|   bands: 80/40/20/15/10/2  IBM vnet:  mont@vnet.ibm.com   |
|   modes: cw,ssb,fm        |                               |
+-----+
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Date: Fri, 29 Oct 1993 07:21:29 GMT  
From: rtech!amdahl!netcomsv!netcom.com!mont@decwrl.dec.com  
Subject: 2 mtr j-pole on 440?  
To: ham-ant@ucsd.edu

In article <CEyFo9.GBC@cbnewsm.cb.att.com> hellman@cbnewsm.cb.att.com  
(eric.s.hellman) writes:  
>Several recent postings have described mounting 2 mtr and 440 j-pole  
>antennas on the same mast. I have used my 2 mtr j-pole on 440 and  
>it seemed to work ok (through repeaters). The swr appeared to be less  
>than 2:1 at the rig end of the coax ( I don't recall how much less).  
>Of course I did not compare the performance to a 440 antenna, so I'd  
>like to know if anyone has made that comparison and can describe the  
>results. (I didn't switch between the j and the rubber thing-a-ma-jing  
>to see which made a better attenuator but the j is a bit higher off ground  
>level.) Anyone care to compute radiation patterns for this?  
>Shel WA2UBK dara@physics.att.com (ignore the header adr)  
>

I know many people who use the 2m J-pole for 440. Actually 440 is the  
3rd harmonic of 146.66. So it is not surprising that the resonance is  
close enough for a less than 2:1 match. Similar to using a 40m dipole  
on it's 3rd harmonic, 15m.

73,  
km6wt

--  
Mont Pierce

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+-----+
| Ham Call: KM6WT           Internet:  mont@netcom.com       |
|   bands: 80/40/20/15/10/2  IBM vnet:  mont@vnet.ibm.com    |
|   modes: cw,ssb,fm        |                               |
+-----+
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Date: Fri, 29 Oct 1993 16:44:05 GMT  
From: spsgate!mogate!newsgate!hawk!hawk@uunet.uu.net  
Subject: Broadcast AM antenna question  
To: ham-ant@ucsd.edu

In article <2156@telenet.telenet.com> deceglie@telenet.com writes:

>  
>This is not really a ham question, but here goes.  
>  
>I live in the Washington, DC area, and at night I sometimes can pick up a  
>broadcast AM station out of New York (1560 kHz). I really love the  
>programming, and there is no comparable format that broadcasts locally.  
>Oddly enough, my cheapo table radio picks it up better than my expensive  
>stereo receiver, yet not good enough.  
>  
>Is there a home brew antenna solution that will enhance reception?  
>I prefer to hook it up to the stereo receiver, which currently uses  
>only a simple 300 ohm "T" for FM, and a helical coil for AM, that is  
>attached to the back of the receiver.  
>  
>What about fading, and competing signals at the same frequency from  
>other, more distant sources?  
>  
>E-mail responses please.  
>

forget the "expensive" stereo rx's. Most of them STINK  
on AM reception sensitivity as you have found out.  
suggest you build a active antenna with a preamp.

Use a whip not a loop. [High Q is better for rejecting  
the adjacent channel. Look in ARRL Handbook...

regards,  
George Hawkins KI5X

-----  
George Hawkins Internet: hawk@hawk.sps.mot.com  
Motorola Digital Signal Processors UUCP: cs.utexas.edu!oakhill!hawk!hawk  
Semiconductor Products Sector Motorola Internal Email - R12137  
6501 William Cannon Drive West Phone (512) 891-4543

Austin Texas 78735-8598

FAX (512) 891-2947

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Date: Thu, 28 Oct 1993 19:20:13 GMT  
From: pa.dec.com!oct17.dfe.dec.com!ryn.mro4.dec.com!est.enet.dec.com!  
randolph@decwrl.dec.com  
Subject: Coax termination blues.  
To: ham-ant@ucsd.edu

In article <1993Oct27.195442.1@wsub.ctstateu.edu>,  
ritterbus001@wsub.ctstateu.edu writes...

>Hello, Cyber-hams,

>

>I have read a couple of times (notably in the ARRL Antenna Handbook) than  
>when preparing the ends of coax for termination, one should be very  
>careful \_not to nick the braid or center conductor\_.

>1) Why not? If I had to guess, I would guess that it had something  
> to do with the skin effect, but this I may be wrong (I was once :-)  
> How deep a cut is considered a "nick"? A couple of microns? One  
> quarter of the radius?

Mostly mechanical reasons so far as I'm aware. It only takes a little flexing  
after the nick to break the conductor entirely... presto, a bad connection  
that looks normal.

>4) Those who have ever worked with coax know that theory and practice  
> may diverge ("In theory, theory and practice are the same. In  
> practice, they are not.") This begs the question, how can one  
> strip this nasty stuff with ordinary tools, i.e., not spending  
> a fortune on special strippers, etc.

Not too bad once you realize how to do it. Just cut MOST of the way through the  
appropriate insulation with your handy-dandy wire strippers, then flex the  
cable back and forth once or twice until the insulation breaks at the cut.  
Don't keep flexing and flexing, or you'll wreck the cable. Cut a little more if  
you have to.

-Tom R. N100Q randolph@est.enet.dec.com

-----  
Date: Fri, 29 Oct 1993 07:55:31 GMT  
From: news.kpc.com!amd!netcomsv!netcom.com!mont@decwrl.dec.com  
Subject: Foxhunting Antenna: H vs DOPPLER  
To: ham-ant@ucsd.edu

In article <1993Oct15.204210.12115@iitmax.iit.edu> CMSMANDELIN@minna.acc.iit.edu

(The Artation) writes:

>I'm relatively new (got my license day after Mother's Day) and just started  
>getting into foxhunting.

>What are the pro/cons between and H-antenna (a la Super DF) and a Doppler?

I use a doppler and other various gear on foxhunts. Dopplers are great for medium to close distances. If the fox is too far away, I use a gain 5 element beam to get an initial bearing and head for it until the doppler kicks in. While I follow the doppler I also listen for the 3rd harmonic on a 440 rig w/ an antenna on the roof. When the 440 rig breaks squelch I know that I'm within 50-200 yards from the fox depending on it's 3rd harmonic signal strength. Usually at about this time the doppler doesn't work as well, the reflections are strong and I'm usually driving rather slowly. At this time I get out the 440 beam and attenuator and close in.

If I had to choose between ONLY a doppler or ONLY a Super DFer, I'd choose the Super DFer. If you can hear the fox at the starting point then it will do the whole job. Just be prepared to stop several times during the hunt to take bearings.

If you don't mind buying a couple of extra goodies, then I'd choose the doppler, a 3 element 2m beam and an attenuator. The beam can be used for the initial bearing, can take sanity bearing along the way until you get use to reading the doppler, and can be used with the attenuator to close in on the fox.

73 & happy hunting,  
mont - km6wt

email: mont@netcom.com or mont@ibmmail.com

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Mont Pierce

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+-----+
| Ham Call: KM6WT           Internet:  mont@netcom.com   |
|   bands: 80/40/20/15/10/2  IBM vnet:  mont@vnet.ibm.com |
|   modes: cw,ssb,fm        |                             |
+-----+
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Date: 30 Oct 93 19:02:04 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: J-Pole lobe (radiation pattern)  
To: ham-ant@ucsd.edu

There have been a number of messages about "J-pole" antennas. Rather than pick on one or the other person, I'll just add my 2 cents worth (if it's that much). Back a long time ago the 1/2 wave vert. with a 1/4 wave stub was known as a "J antenna". The "J-pole" was a collinear array of modified folded dipoles mounted on a mast. Directivity was controlled by positioning the antennas around the pole. The "J" came from the fact that the modified folded dipole had one side folded and the other just a 1/4 wave rod. The pole comes from the pole that the array is mounted on.. Sorta like 4 Js mounted on a "pole".

One of the early "J antenna" designs was written up by W6TYP (long gone) built on an 8 foot stainless whip. chopped in a couple of pieces. Neat design. To quote part of his write up.

"HIGH PERFORMANCE OMNI

For the dedicated connoisseur who is primarily interested in greatest possible VHF area illumination--- as opposed to the vast majority of pickle-pushers who by the pressure of a misplaced/female - oriented sense of aesthetic value - or by the overwhelming dire need to seek group communications by means of a crutch atop a mile-high mountain -- are employing 19" semi-radiating dummy loads."

The above was copied word for word from his Mobile @m "J" antenna description.

Pete <kd6hr>

internet: kd6hr.el\_segundo@xerox.com

-----  
Date: Sat, 30 Oct 1993 17:22:02 GMT

From: news.service.uci.edu!paris.ics.uci.edu!csulb.edu!library.ucla.edu!agate!

spool.mu.edu!torn!newshost.uwo.ca!dialin2.business.uwo.ca!CHARLES@network.ucsd.edu

Subject: Wanted: VHF/UHF Yagi measurements

To: ham-ant@ucsd.edu

I am compiling a collection of measurements for beam antennas used on 10m, 6m, 2m, 220mhz, 440mhz, 850mhz, 910mhz, and 1280mhz.

If anyone has either a good working design of their own or commercially built yagis, then sending me the element lengths and spacings etc. would be appreciated.

I will be testing these designs with antenna analysis software to obtain fair estimates of gain and performance.

Also, I have a few designs that for experimenters, that are willing to share any information on this topic. For example, I have a nice 444 MHz 11 element design.

VE3UCM

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Date: Sun, 31 Oct 1993 09:10:53 GMT  
From: raven.alaska.edu!aurora.alaska.edu!fsrla@decwrl.dec.com  
Subject: Wire Size question  
To: ham-ant@ucsd.edu

In the 1982 ARRL Antenna book htthere(  
is a 2 element quad antenna for 2Meters  
on page 11-13 (it may be in new editions  
but this is nthe most recent our Library  
has.)

My question is this: It calls for #8  
aluminum wire but the only wire that  
is aluminum I can find here in town is #9.  
Will this change anything? What would I have  
to do to correct for this size wire? Should, or  
should it not be insulateed (the stuff I found had  
a thin green plastic on it.)  
Thanks for your help!

Roger Asbury WL7NT

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Date: 30 Oct 93 15:36:59 GMT  
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu  
To: ham-ant@ucsd.edu

References <CFBn3I.Kuo@tc.fluke.COM>, <1993oct23.163827.28654@ke4zv.atl.ga.us>,  
<CFM6M8.AAw@tc.fluke.COM>  
Reply-To : gary@ke4zv.UUCP (Gary Coffman)  
Subject : Re: SWR measurements are too good!

In article <CFM6M8.AAw@tc.fluke.COM> rem@tc.fluke.COM (Randy Mather) writes:  
>In article <1993oct23.163827.28654@ke4zv.atl.ga.us> gary@ke4zv.UUCP (Gary  
Coffman) writes:

>>

>>But, when the line has loss, Emax/Emin becomes different along the  
>>line because of the line loss. That's because Emin has to travel  
>>further along the line than Emax to reach the measuring instrument.  
>>It has to go to the end and return to the meter. Thus it incurs a  
>>greater loss. Therefore, if measuring at the input end of the line,  
>

>This comment on Emin traveling further implies that Emin is the reflected  
>voltage coming back down the line. I think you better look again at your  
>transmission line books, as well as ARRL Antenna book, ARRL Handbook and

>other books on the subject. All my readings indicate the Emin as well  
>as Emax is the vector sum of the forward and reflected voltages as they  
>exist along the line. As theses two voltages (or currents) pass by one  
>another they set up these voltage resultants (or current resultants) that  
>we all refer to as VSWR (or ISWR). Emin & Emax may appear to move as the  
>forward and reflected waves pass by one another but "a" voltage labeled Emin  
>or even Emax does not travel up and back on the line.

I tend to use the finite impulse method when discussing the behavior  
of mismatched lines rather than the CW interpretation. The result is  
the same, aside from an offset of no consequence because it cancels  
out. Yes Emax and Emin are the vector sums of the forward and reflected  
wave at a given point. It should be obvious, however, that the reflected  
wave has travelled further, and has been diminished more by the coax loss.

>I do want to thank you Gary for making me go back and reread a Maxwell article  
>that I thought supported my "SWR is the Same all along the line". I  
>discovered that I misinterpreted what Mr Maxwell was trying to say.  
>

>So at this point I will retract my statement and will continue to study  
>this subject more thoroughly. I do beleive the main point is the SWR  
>is the result of the mismatch between the load (Antenna) and the Zo of  
>the transmission line. Measuring SWR at the input end of the line is  
>not a true indication of the SWR that is causing the SWR in the first  
>place. OF course that is the thread of the subject that I branched off  
>of on the net here.

Of course the SWR is a function of load mismatch. That's a definition  
of SWR in the lossless case. However, the real world is never lossless  
so a more sophisticated view is required. The SWR read at the input  
end of the cable is a function of the mismatch at the load \*and\* the  
cable loss that would be obtained \*if the cable were matched\*. So  
measuring at the input requires knowledge, easily measured, of one  
more parameter before the true value of the mismatch can be calculated.

Note that SWR only has meaning \*on a transmission line\*, so measuring  
SWR at the load is not measuring SWR at all. It's using the meter's  
internal construction as a means of determining a ratio indicating the  
mismatch of the antenna with respect to the \*meter's\* characteristic  
impedance. While this can amount to the same thing in practice,  
conceptually it's entirely different. Standing waves require a transmission  
line to "stand" on.

Gary

--

Gary Coffman KE4ZV	"If 10% is good enough   gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	for Jesus, it's good   uunet!rsiatl!ke4zv!gary
534 Shannon Way	enough for Uncle Sam."  emory!kd4nc!ke4zv!gary



Lawrenceville, GA 30244 | -Ray Stevens |

-----  
Date: Thu, 28 Oct 1993 15:49:16 GMT  
From: fluke!rem@beaver.cs.washington.edu  
To: ham-ant@ucsd.edu

References <1993Oct21.190751.28809@genroco.com>, <CFBn3I.Kuo@tc.fluke.COM>,  
<1993Oct23.163827.28654@ke4zv.atl.ga.us>  
Subject : Re: SWR measurements are too good!

In article <1993Oct23.163827.28654@ke4zv.atl.ga.us> gary@ke4zv.UUCP (Gary Coffman) writes:

>  
>But, when the line has loss,  $E_{max}/E_{min}$  becomes different along the  
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>greater loss. Therefore, if measuring at the input end of the line,

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Randy  
AJ7B

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End of Ham-Ant Digest V93 #95

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